

FEB 22 2007

REMARKS

Claims 1-28 are pending. Amendments have been made to independent Claims 1, 18, 23 and 26 to clarify the invention. Some recitations have been added. Other recitations have been removed.

Claims 1 and 26 have been amended to recite "wherein the amount of error correction information generated is based at least partially upon the amount of loss." Claims 18 and 23 have been amended to recite "wherein the number of error correction packets transmitted is based at least partially on the amount of loss determined for transmissions between the encoder and the decoder." These amendments are believed supported in Figures 1 and 2 and associated description.

More specifically, "according to various embodiments, the error correction tunnels can be established by network administrators using mechanisms such as command line interfaces or graphical user interfaces. The amount of error correction information inserted may depend on the lossiness of the particular routes between the tunnel endpoints. More error correction information may need to be provided for particularly lossy networks. In one embodiment, 25 parity packets are provided for 230 data packets to allow recovery of any 25 lost data packets. The techniques of the present invention recognize that lost data is typically caused by lost or dropped packets and consequently parity or error correction packets are provided. In TCP, parity information is provided within each packet. However, this parity information is not sufficient to allow for error recovery and is typically used to determine if the packet should be dropped. By providing error correction at the network layer, network administrators can configure customized reliability over particular tunnels. In some examples, a network administrator may provide for more error correction packets if a network portion is particularly lossy. In another portion, fewer error correction packets may be used to increase throughput and decrease latency." (page 9, line 28 - page 10, line 12)

None of the references cited by the Examiner is believed to teach or suggest the amended recitations. USPN 6,243,846 ("Schuster") cited by the Examiner describes a system "for handling packet loss that may arise in the communication of data or real time media signals, ..." To handle packet loss, Schuster "generates and transmits into the network one or more forward error correction codes, or parity packets, ... a receiving end may extract lost payload from this redundant information ..." (Column 2, Lines 37-43) Schuster is believed to use a fixed amount or percentage of parity packets and does not allow configuration based on the amount of loss between two particular network nodes.

Application No.: 10/824,181

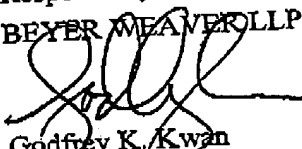
6

According to particular embodiments of the present invention, the use of FEC tunnels allows network administrators to implement error correction for particularly lossy paths, as opposed to the entire network between a client and server. In some embodiments, the ability to selectively implement error correction in particular areas of the network, allows more efficient use of network capacity.

Schuster does not teach or suggest the use of tunnels to implement forward error correction. The Examiner argues that Schuster's RTP protocol is a tunnel protocol. The Applicants respectfully disagree. RTP (Real-time Transport Protocol) is a standard packet format for delivering audio and video data. No tunnels are established between network nodes in the standard Real-time Transport Protocol. Furthermore, RTP does not establish any tunnel between an encoder and a decoder. Still furthermore, RTP does not establish any error correction tunnel between the encoder and the decoder.

USPN 6,079,042 ("Vaman"), USPN 6,895,019 ("Gibson"), and USPN 5,642,365 ("Murakami") also cited by the Examiner similarly do not "allow configuration based on the amount of loss between two particular network nodes" as variably recited in the independent claims. Vaman, Gibson, Murakami, and Schuster are all believed to merely mention network based error correction schemes, without determining the amount of loss between two specific nodes.

In light of the above remarks and claim amendments, the Applicants believe that all pending claims are allowable in their present form. Please feel free to contact the undersigned at the number provided below if there are any questions, concerns, or remaining issues.

Respectfully submitted,  
BEYER WEAVER LLP  
  
Godfrey K. Kwan  
Registration No. 46,850

P.O. Box 70250  
Oakland, CA 94612-0250